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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,645	06/15/2001	Gerhard Beckmann	21535-008	2217

35437 7590 02/26/2003

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EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,645

Applicant(s)

BECKMANN ET AL.

Examiner

Stephen J. Kalafut

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1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 is/are allowed.
- 6) ☒ Claim(s) 1-3, 11, 12 and 16 is/are rejected.
- 7) ☒ Claim(s) 4-10, 13-15 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by either Farrell (US 3,580,163) or Totsuka (US 6,051,266).

Farrell discloses a chamber which is substantially closed, and includes a wall (19) with a domed shape, and an inlet (29). Recitations of intended use, such as “for a fuel cell system”, do not distinguish.

Totsuka discloses a chamber which is substantially closed, and includes a wall (30) with a domed shape, and an inlet (16). Again, recitations of intended use do not distinguish.

Claims 3, 11, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yen *et al.* (US 5,795,496).

Yen *et al.* disclose a fuel cell system which includes a housing (12) divided into chambers for an anode (14) and a cathode (16), and a proton conductive electrolyte (18), the two electrodes each including a catalyst (column 3, line 33 through column 4, line 5); a mixing pump (20) in fluid communication with a fuel chamber (19); two conduits (31) connected between the pump and the anode chamber; and a coalescing surface (24) which collects effluent CO₂ gas and expels it from the system. While a single cell is shown in figure 1, a stack of cells may also be used (column 3, lines 3-7). A stack would necessarily have a bipolar construction, since the

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anode of one cell would be connected to the cathode of the adjacent cell. Operation of the system would produce the steps recited in claim 16. The gas would be sent from the fuel cell into contact with the coalescing surface (24), and then collected by being removed from the fuel cell system. The pump (20) would also meet the term "mixing chamber" of claim 16.

Claims 4-10, 13-15 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art applied above, or cited either below or by applicants, does not disclose the present system also including a coalescing surface for gas collection on either conduit, a vent on either conduit adjacent to the coalescing surface, a vaulted or dome-shaped coalescing surface, a plurality of solid electrolyte membranes in a single plane, the coalescing surface being part of the anode or cathode chamber.

Claim 18 is allowed. The prior art also does not disclose a fuel cell system with two coalescing surfaces, each in communication with one of the electrode chambers, and a vent adjacent to each surface.

The disclosure is objected to because of the following informalities: Drawing numerals 45 and 47, both in figure 4, are not found in the specification. The numeral 46 appears to denote two different items in figure 4. The numeral 2, on page 3, line 18, is not found in any drawing. The specification, on page 4, refers to figure 3, but there is no figure 3 *per se* (without any letter). Should this refer to figure 2? Appropriate correction is required.

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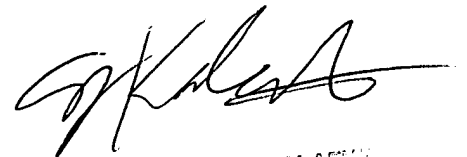
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grover *et al.* (US 6,485,854) disclose a fuel cell with a water separator having a domed upper surface (88). This system uses gaseous fuel rather than the present water/fuel mixture and mixing pump.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is (703) 308-0433. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

sjk
February 20, 2003


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP
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